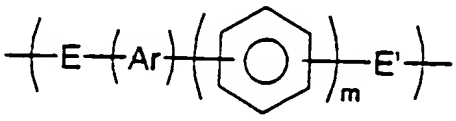
AMENDMENTS TO THE CLAIMS:

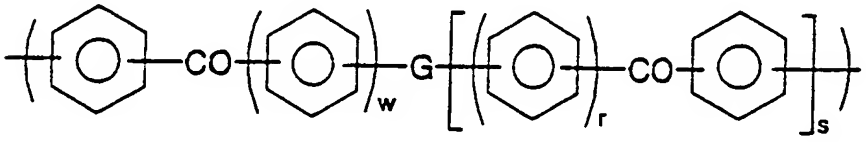
This listing of claims will replace all prior versions, and listings, of claims in the application:

1 (currently amended). A composite membrane which includes a conductive polymer and a support material for the polymer, said polymer ~~having~~ comprising a moiety of formula



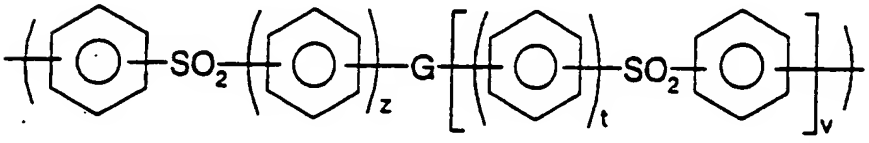
I

and/or a moiety of formula



II

and/or a moiety of formula

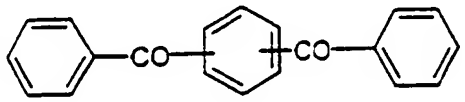


III

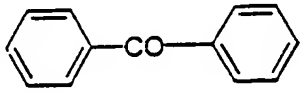
wherein at least some of the units I, II and/or III are functionalized to provide ion

exchange sites; wherein the phenyl moieties in units I, II, and III are independently optionally substituted and optionally cross-linked; ~~and~~ wherein m, r, s, t, v, w and z independently represent zero or a positive integer, E and E' independently represent an oxygen or a sulphur atom or a direct link, G represents an oxygen or sulphur atom, a direct link or a -O-Ph-O- moiety where Ph represents a phenyl group and Ar is selected from one of the following moieties (i) * and (i) to (x) which is bonded via one or more of its phenyl moieties to adjacent moieties, and wherein said conductive polymer includes at least some ketone moieties in the polymeric chain

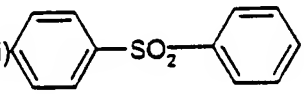
(i)*



(i)



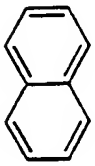
(ii)



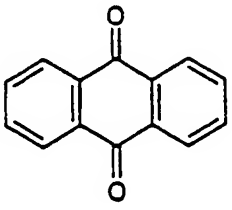
(iii)

(iv)

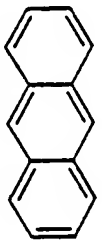
(v)



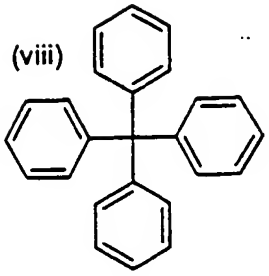
(vi)



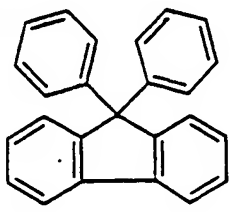
(vii)



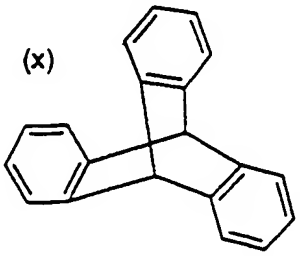
(viii)



(ix)



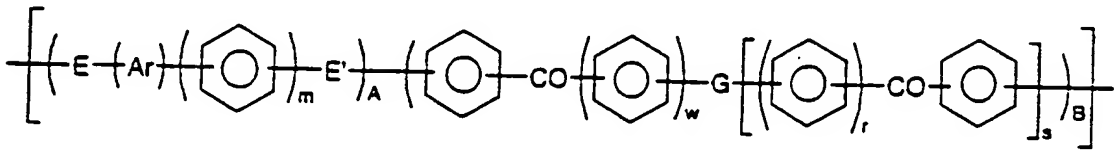
(x)



2 (withdrawn). A membrane according to claim 1, where said first conductive polymer is sulphonated.

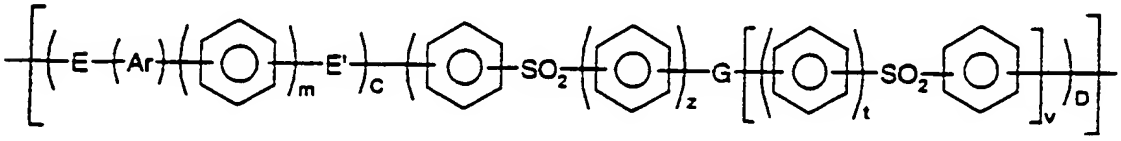
3 (previously presented). A membrane according to claim 1, wherein said first conductive polymer is crystalline.

4 (withdrawn). A membrane according to claim 1, wherein said polymer is a homopolymer having a repeat unit of general formula



IV

or a homopolymer having a repeat unit of general formula



V

or a random or block copolymer of at least two different units of IV and/or V wherein A, B, C and D independently represent 0 or 1.

5 (cancelled).

6 (withdrawn). A membrane according to claim 1, wherein said first conductive

polymer is a copolymer comprising a first repeat unit which is selected from the following:

(a) a unit of formula IV wherein E and E' represent oxygen atoms, G represents a direct link, Ar represents a represents a moiety of structure (iv), m and s represent zero, w represent 1, A and B represent 1;

(b) a unit of formula IV wherein E represents an oxygen atom, E' represents a direct link, Ar represents a moiety of structure (i), m represents zero, A represents 1, B represents zero;

(c) a unit of formula V wherein E and E' represent oxygen atoms, G represents a direct link, Ar represents a moiety of structure (iv), m and v represent zero, z represents 1 and C and 0 represent 1;

(d) a unit of formula V wherein E represents an oxygen atom, E' represents a direct link, Ar represents a moiety of structure (ii), m represents 0, C represents 1, D represents 0; or

(e) a unit of formula V wherein E and E' represents an oxygen atom, Ar represents a structure (i), m represents 0, C represents 1, Z represents 1, G represents a direct link, v represents 0 and D represents 1;

and a second repeat unit which is selected from the following:

(f) a unit of formula IV wherein E and E' represent oxygen atoms, G represents a direct link, Ar represents a moiety of structure (iv), m represents 1, w represents 1, s represents zero, A and B represent 1;

(g) a unit of formula IV wherein E represents an oxygen atom, E' is a direct link, G represents a direct link, Ar represents a moeity of structure (iv), m and s represent

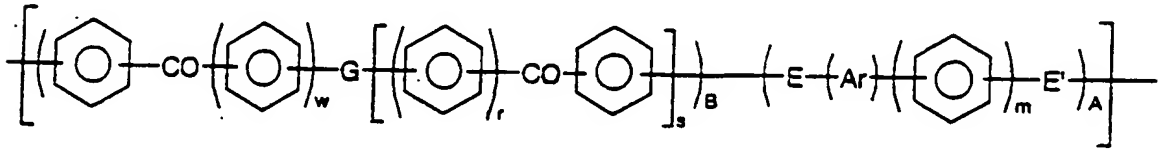
zero, w represent 1, A and B represent 1;

(h) a unit of formula V wherein E and E' represent oxygen atoms, G represents a direct link, Ar represents a moiety of structure (iv), m represents 1, z represents 1, v represents 0, C and D represent 1; and

(i) a unit of formula V wherein E represents an oxygen atom, E' represents a direct link, G represents a direct link,. Ar represents a moiety of structure (iv), m and v represent zero, z represents 1, C and D represent 1;

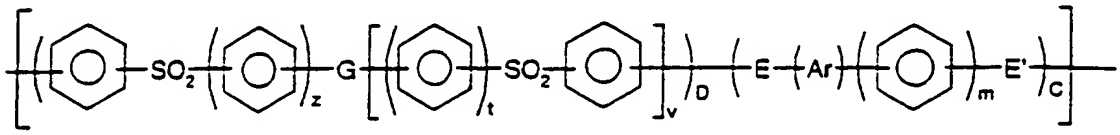
7 (withdrawn). A membrane according to claim 6, wherein said first conductive polymer includes a first repeat unit selected from repeat units (b), (d) or (e) in combination with a second repeat unit selected from units (f) or (h).

8 (withdrawn). A membrane according to claim 1, wherein said first conductive polymer is a homopolymer having a repeat unit of general formula



IV*

or a homopolymer having a repeat unit of general formula



V*

or a random or block copolymer of at least two different units of IV* and/or V* wherein A, B, C and D independently represent 0 or 1.

9 (withdrawn). A membrane according to claim 1, wherein said first conductive polymer includes a biphenylene moiety.

10 (withdrawn). A membrane according to claim 1, wherein said first conductive polymer includes a -O--biphenylene-O-moiety.

11 (withdrawn). A membrane according to claim 1, wherein a film of said conductive polymer is laminated to the support material.

12 (previously presented). A membrane according to claim 1, wherein the support material is porous and said conductive polymer is impregnated in the support material.

13 (withdrawn). A membrane according to claim 1, wherein said support material comprises a polymer having a moiety of formula I, II and/or III as described in claim 1 except that the polymer of the support material is either not sulphonated (or otherwise functionalised to provide ion-exchange sites) or is only sulphonated (or otherwise functionalised to provide ion—exchange sites) at or in the region of the surface of the support material.

14 (withdrawn). A membrane according to claim 1, wherein said support material is selected from the following homopolymers of formula IV as shown in claim 4:

- E and E' represent oxygen atoms, G represents a direct link, Ar represents a moiety of structure (iv), m and s represent zero, w represents 1 and A and B represent 1

- E represents an oxygen atom, E' represents a direct link, Ar represents a moiety of structure (i), m represents zero, A represents 1, B represents zero

- Ar represents a moiety (iv), E and E' represent oxygen atoms, G represents a direct link, m represents 0, w represents 0, s represents 1, r represents 1 and A and B represent 1.

- Ar represents a structure (i)*, E represents an oxygen atom, E' represents a direct link, m represents 0, A represents 1, B represents 0.

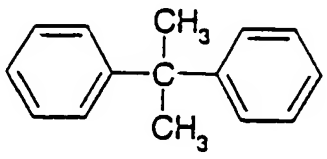
- Ar represents moiety (i), E and E' represent oxygen atoms, G represents a direct link, m represents zero, w represents 1, r represents 0, s represents 1 and A and B represent 1

- Ar represent moiety (iv); E represents a sulphur atom, m represents 0, E' represents a direct link and B represents 0;

or is selected from:

- a homopolymer of formula V wherein E represents an oxygen atom, E' represents a direct link, Ar represents a moiety of structure (ii), m represents 0, C represents 1, D represents 0; and is selected from:

- polysulphone for example comprising a homopolymer of formula V wherein E and E' represent oxygen atoms, m represents zero, C and D represent 1, z represents 1, G represents a direct link, v represents zero and Ar represents a moiety of structure:



15 (currently amended). A membrane according to claim 1, wherein said first conductive polymer has an equivalent weight (EW) of less than 800g/mol~~, preferably less than 500 g/mol~~.

16 (withdrawn). A conductive polymer and a support material for the polymer, wherein said polymer includes: polyaryletherketone and/or polyarylethersulphone units; and units of formula -O-ph_n-O- (XX) wherein Ph represents a phenyl group and n represents an integer of 2 or greater and wherein Ph groups of units (XX) are sulphonated.

17 (previously presented). A fuel cell or electroylser incorporating a composite membrane according to claim 1.

18 (withdrawn). A method of making a composite membrane according to claim 1, the method comprising causing a conductive polymer as described above to be associated with a support material as described above.

19 (withdrawn). A method according to claim 18, which includes impregnating porous support material with conductive polymer.

20 (withdrawn). A method according to claim 18 , wherein a first solvent formulation comprises a polar aprotic solvent in which a conductive polymer is provided

and said support material is a material (e.g. a polyetheretherketone fabric or a polyetherketone microporous membrane) which is not soluble in said polar aprotic solvent, wherein the method includes a step of contacting said support material with said first solvent formulation.

21 (withdrawn). A method according to claim 18 , wherein said support material is a fabric and the method includes a step of contacting the fabric with a first solvent formulation comprising a first solvent and said conductive polymer, wherein said first solvent and said support material are selected so that the first solvent solubilizes a surface of the support material.

22 (withdrawn). A method according to claim 21, wherein said first solvent is capable of functionalising said support material to provide ion-exchange sites on the surface thereof.

23 (withdrawn). A method according to claim 22, wherein said first solvent includes less than 99% acid.

24 (withdrawn). A method according to claim 18 , the method including:

contacting said support material with a solvent formulation comprising a first solvent which solubilizes the support material; and

contacting the support material with a second solvent to cause phase inversion and render said support material porous.

25 (withdrawn). A method according to claim 24, wherein said conductive polymer is provided in a third solvent and caused to penetrate pores in the support material.

26 (new). A membrane according to claim 1, wherein said first conductive polymer has an equivalent weight (EW) of less than 500 g/mol.